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DURHAM, N.H. -- In the summer of 2004, inexpensive, miniature ozone sensors developed by scientists and engineers from the University of New Hampshire's Institute for the Study of Earth, Oceans, and Space (EOS) were demonstrated on a series of balloon flights over the Atlantic Ocean in the largest air-quality study ever conducted.

This summer 11 of the devices will sniff the air for the pollutant along Interstate 93 and other roads in New Hampshire as part of the New Hampshire Department of Transportation's new Road Weather Information System (RWIS) stations.

The roadside weather stations, which NHDOT has implemented in conjunction with similar efforts in neighboring states, are intended to help highway agencies respond more efficiently to inclement weather conditions.

While the ozone sensors are not part of this effort per se, locating the newly developed miniature sensors primarily along the I-93 corridor will provide scientists with key air quality information and will help to validate models used to forecast air quality.

The sensors were developed at EOS under two joint UNH-National Oceanic and Atmospheric Administration (NOAA) programs known as AIRMAP and Targeted Wind Sensing. U. S. Senator Judd Gregg (R-NH) has been instrumental in securing funding for both air quality programs.

Currently, AIRMAP operates five permanent, ground-based atmospheric observatories – some of the most sophisticated in the world, which sample the air day and night for 180 chemicals critical to the region's air quality. The ozone sensors will significantly extend the reach of AIRMAP's ozone measurements. Targeted Wind Sensing's overall focus, which includes the continuous measurement of levels of ozone in the Northeast, is to reach a better understanding of the components of our air to improve the quality of overall weather and air forecasts.

"The ozone sensors will significantly enhance AIRMAP's air-quality network," says Robert Talbot, director of both UNH-NOAA programs at the Climate Change Research Center within EOS. He adds, "And they serve as a test-bed for NOAA's air quality forecasting, which began in the Northeast in the fall of 2004."

In addition to UNH, partners in the RWIS project include Plymouth State University's Judd Gregg Meteorology Institute and Surface Systems Incorporated of St. Louis, Missouri, which has provided equipment and installation.

Among other things, the RWIS stations will provide the highway department with enhanced monitoring of the condition of road surfaces for improved anti-icing and de-icing strategies. Meteorological data collected at the sites will be disseminated to government agencies and educational institutions.